User's guide
H-2000-6505-01-A

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Renishaw CNC Reporter™

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Welcome

Renishaw CNC Reporter™ is a software package designed to display and process inspection results from Productivity+™. It allows you to create multiple inspection reports and to track a measured feature between several measured parts.

Renishaw CNC Reporter™ runs from within the Microsoft® Excel® spreadsheet package, providing a familiar environment in which to work.

We hope that Renishaw CNC Reporter™ satisfies your reporting requirements. If you do require any support, please contact your local Renishaw representative. Details are available at www.renishaw.com/contact.

Software requirements

Renishaw CNC Reporter™ is compatible with the following Microsoft® operating systems:

- Windows® 98
- Windows® 2000
- Windows® XP

Renishaw CNC Reporter™ requires Microsoft® Excel® to function and is compatible with the following Microsoft® products:

- Excel® 97
- Excel® 2000
- Excel® 2002
- Excel® 2003

The probing results data collected and analysed by Renishaw CNC Reporter™ is compatible with the output from the following Renishaw Productivity+™ products:

- Renishaw Productivity+™ Active Editor
- Renishaw Productivity+™ Active Editor Pro
- Renishaw Productivity+™ GibbsCAM® plug-in

Before you begin

Customising the Productivity+™ post processor (*.RenMF file)

The Renishaw Productivity+™ post processor is a text file with a *.RenMF file extension. It contains a series of commands and switches that can be configured to suit your particular control and application. This includes the DELIM# function that is used to configure the system to output delimited data.

When the post processor is first installed, the DELIM# function is disabled using a semi-colon (;) to render the function inactive. When using Renishaw CNC Reporter™, it is imperative that the DELIM# symbol is reactivated by removing the semi-colon. The appropriate delimiter character (for example "/") must appear after the DELIM# character.

Edit the RenMF file and change the section:

```
_ROTATE_Z_AXIS_VECTOR# 0,0,1
;_DELIM# /
_CAN_READ_ACTIVE_WCS 1
```

so that it appears as follows:

```
_ROTATE_Z_AXIS_VECTOR# 0,0,1
_DELIM# /
_CAN_READ_ACTIVE_WCS 1
```

Indicating a new component inspection report

Within a batch of parts, it is important to indicate when a new component is being inspected. This is done by outputting a “trigger word” at the end of the final Productivity+™ inspection cycle using DPRNT (or equivalent) followed by a particular word or string of characters. This is added as a G Code block or equivalent.

An example of a G Code block for an ISO controller would be:

```
POPEN
G103P1
DPRNT[COMPONENTEND]
G4P50
G103
PCLOS
```

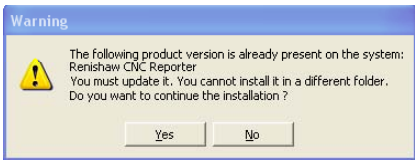
CAUTION: The “trigger word” used within the macro program must match exactly the entry in the “trigger word” field on the **Admin** worksheet (see page 19).

Installation

Insert the CD into the CD drive of your computer. Installation begins automatically. The following screens are provided to guide you through the process:

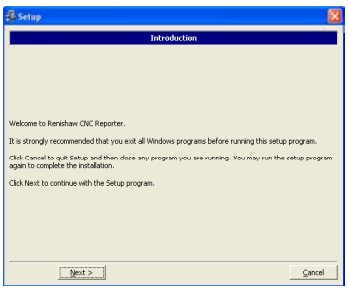
Initial set-up screen

No action required.


Warning
The following product version is already present on the system:
Renishaw CNC Reporter
You must update it. You cannot install it in a different folder.
Do you want to continue the installation ?
Yes
No

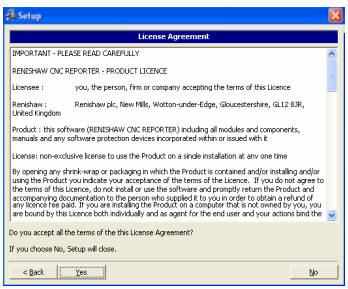
Warning screen
(only shown if reinstalling the product)

Click **Yes**.


Setup
Introduction
Welcome to Renishaw CNC Reporter.
It is strongly recommended that you exit all Windows programs before running this setup program.
Click Cancel to quit Setup and then close any program you are running. You may run the setup program again to complete the installation.
Click Next to continue with the Setup program.
Next >
Cancel

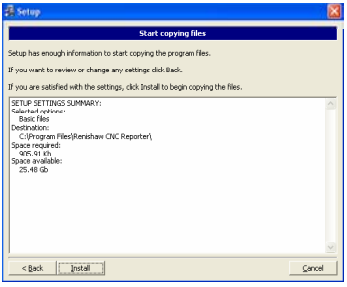
Introduction screen

Click **Next**.


Setup
License Agreement
IMPORTANT - PLEASE READ CAREFULLY
RENISHAW CNC REPORTER - PRODUCT LICENCE
Licensee : you, the person, firm or company accepting the terms of this Licence
Renishaw : Renishaw plc, New Mills, Wotton-under-Edge, Gloucestershire, GL12 8JR, United Kingdom
Product : this software (RENISHAW CNC REPORTER) including all modules and components, manuals and any software protection devices incorporated within or issued with it
License: non-exclusive license to use the Product on a single installation at any one time
By opening any shrink-wrap or packaging in which the Product is contained and/or installing and/or using the Product you indicate your acceptance of the terms of the Licence. If you do not agree to the terms of this Licence, do not install or use the software and promptly return the Product and accompanying documentation to the person who supplied it to you in order to obtain a refund of any licence fee paid. If you are installing the Product on a computer that is not owned by you, you are bound by this Licence both individually and as agent for the end user and your actions bind the
Do you accept all the terms of the this License Agreement?
If you choose No, Setup will close.
< Back
Yes
No

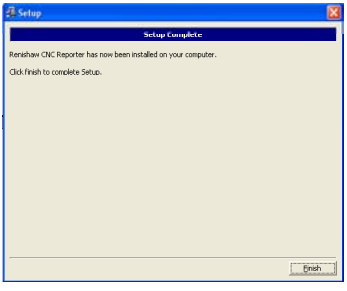
License agreement

Please read through then click **Yes** to accept and proceed.



Installation summary

Click **Install**.



End of set-up process

Click **Finish**.

The installation process is now complete.

The following shortcuts are added to the desktop:

Renishaw CNC Reporter This is the main application.

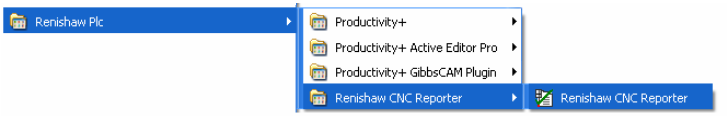
Demo Results This is a text file containing five samples of typical Fanuc-based Productivity+™ output.

CNCReporterTemplate.xlt This is the inspection report template that can be customised.

Using Renishaw CNC Reporter™

Launching the application

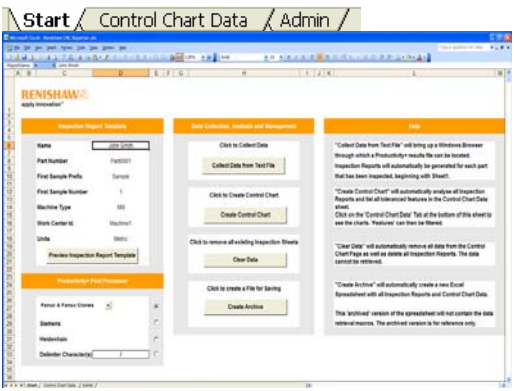
The Renishaw CNC Reporter™ application can be launched from the **Start** menu by selecting **All Programs** and following the sequence shown below:



Alternatively, double-click on the icon on the desktop.

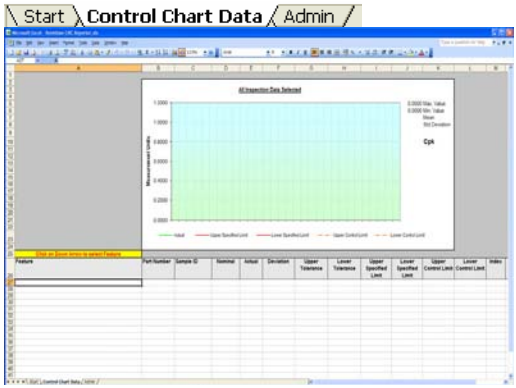
This opens the Microsoft® Excel® application. If a security warning appears, select Enable Macros.

The **Start** worksheet is displayed as shown below.

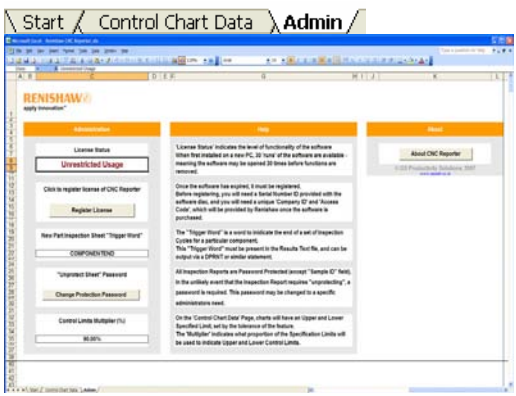


There are two other worksheets available as follows:

- The **Control Chart Data** worksheet, where control charts are generated.



- The **Admin** worksheet.



Demo mode

When Renishaw CNC Reporter™ is first installed, it runs in demo mode until registration has taken place. Demo mode operates under the following restrictions:

- The application may be launched only 30 times. After this, access to all key functionality is denied.
- Only the Demo Results.txt file may be run.

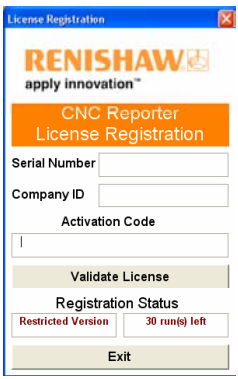
The **Admin** worksheet displays the license status. When the product is first installed, the status is as shown below:

Product registration

Registration allows full unrestricted usage of the product, and is carried out from the **Admin** worksheet as follows:

1. Click the **Register License** button shown below:

2. Fill in the **Serial Number**, **Company ID** and **Activation** boxes. The information required can be found on the back cover of this book, otherwise contact your local Renishaw distributor.



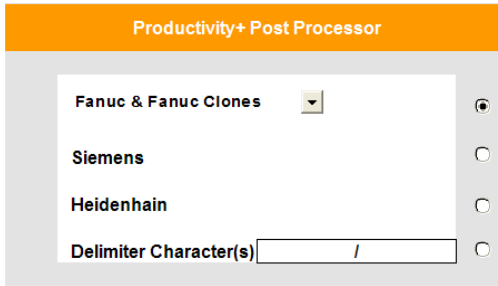
NOTE: All registration codes are case sensitive.

3. Click the **Validate License** button. If validation is successful, the **Admin** worksheet displays the following message:

Setting up, importing and analysing data

Selecting the post processor

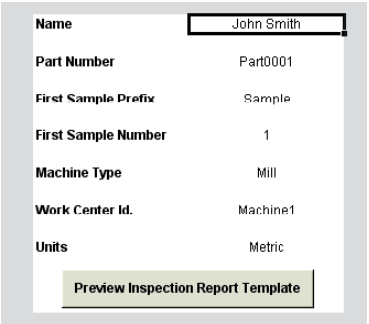
Renishaw CNC Reporter™ must be set up to accept data from the appropriate Renishaw Productivity+™ post processor. From the **Start** worksheet, click the option corresponding to your controller type. The Delimiter Character(s) option allows the use of other characters if required.



NOTE: Many Fanuc and similarly styled ISO format post processors may appear under the **Fanuc & Fanuc Clones** drop-down list.

Setting headers and previewing inspection reports

From the **Start** worksheet, set the initial inspection report tab. This can ONLY be set when no data has been imported into Renishaw CNC Reporter™.



NOTE: The **First Sample Number** MUST be a number rather than text.

Click the **Preview Inspection Report Header Template** button. The following confirmation message appears:

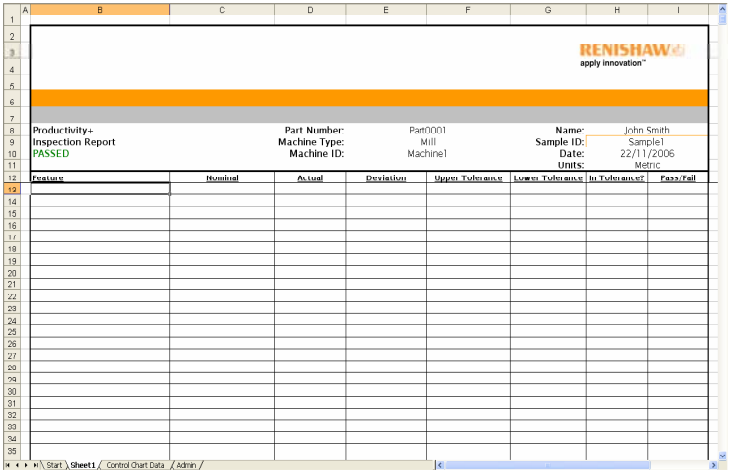
Click **Yes** to import the inspection report template file into Renishaw CNC Reporter™ as Sheet 1.

CAUTION: DO NOT change the worksheet name of this inspection report.

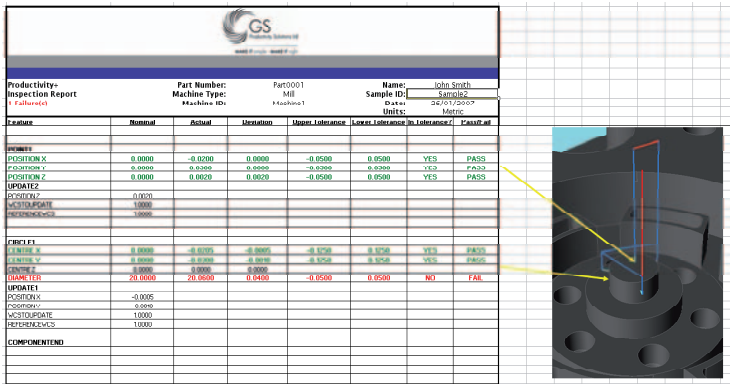
Customising the inspection report template

To customise the report, click the shortcut on the desktop.

The report template opens in Excel® as a single editable worksheet.



The border at the top of the worksheet may be changed to include a customised logo and colour scheme. Graphics may also be added to suit specific inspection requirements (see example below):



Productivity+ Inspection Report		Part Number:	Part0001	Name:	John Smith
1 Failure(s)		Machine Type:	Mill	Sample ID:	Sample2
		Machine ID:	Machine1	Date:	26/01/2007
				Units:	Metric

Feature	Nominal	Actual	Deviation	Upper Tolerance	Lower Tolerance	In Tolerance ?	Pass/Fail
[illegible]							
POSITION X	0.0000	-0.0200	0.0000	-0.0500	0.0500	YES	PASS
POSITION Y	0.0000	0.0200	0.0000	-0.0500	0.0500	YES	PASS
POSITION Z	0.0000	0.0020	0.0020	-0.0500	0.0500	YES	PASS
UPDATE2							
POSITION Z	0.0020						
WCSTOUPDATE	1.0000						
REFERENCEWCS	1.0000						
[illegible]							
CIRCLE1							
CENTRE X	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	YES	PASS
CENTRE Y	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	YES	PASS
CENTRE Z	0.0000	0.0000	0.0000				
DIAMETER	20.0000	20.0600	0.0400	-0.0500	0.0500	NO	FAIL
UPDATE1							
POSITION X	-0.0005						
POSITION Y	0.0010						
WCSTOUPDATE	1.0000						
REFERENCEWCS	1.0000						
COMPONENTEND							

CAUTION: Do not change any of the cell positions.

On the header, the **Sample ID** box may be edited, but all other areas are protected.

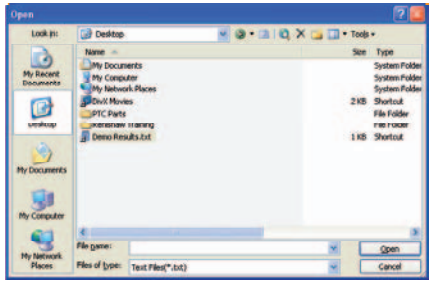
When you have made the desired changes, save the customised template as CNCReporterTemplate.xlt in the Renishaw CNC Reporter™ folder (C:\Program Files\Renishaw CNC Reporter).

CAUTION: Take care to save the file as an Excel® template (.xlt) and not a workbook (.xls).

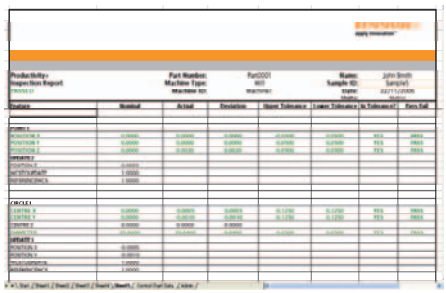
Importing data

On the **Start** worksheet, click the following button:

From the file list, select the text file containing the probing results and click **Open**.



The data is automatically loaded into Renishaw CNC Reporter™, with a separate inspection report (i.e. worksheet) created for each individual component within a batch of components. The data is formatted according to whether features are in or out of tolerance. The header of each inspection report shows whether the component has passed or failed.



CAUTION: DO NOT change the worksheet names (Sheet1, Sheet2 etc).

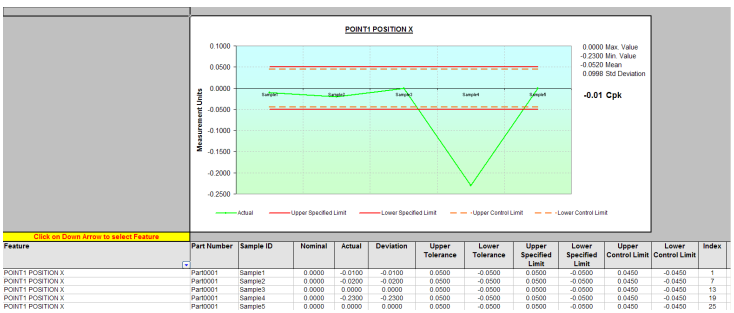
Once the data is loaded, it can be compiled into individual control charts based on a combination of feature and dimension names.

Creating control charts

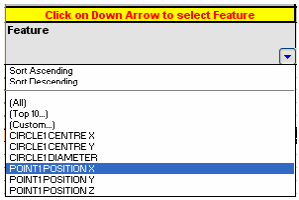
Control charts (run time charts) can be created from the inspection reports to highlight trends over the differing samples in sequential order. ONLY data with upper and lower tolerances are available for viewing in control chart format.

To create control charts, click the following button on the **Start** worksheet:

There may be a short delay while the data is processed. Once the data is compiled, an initial control chart appears on the **Control Chart Data** worksheet.



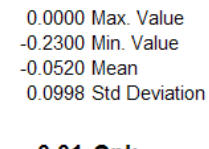
To create a chart for a different feature, click the down arrow at the top of the **Feature** column and select a new feature from the list of features available:



A chart is then generated for the selected feature.

A number of automatic calculations are made within the chart:

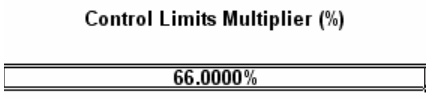
- Maximum “actual” value within the range
- Minimum “actual” value within the range
- Mean “actual” value within the range
- Standard deviation of the range
- Cpk index



Setting control limits

The chart also shows the control limits. These are based on a percentile proportion of the overall specified tolerance limits.

The control limits multiplier is set on the **Admin** worksheet. The default is 90% but can be changed as required.



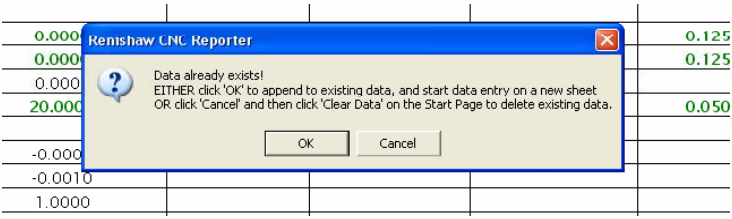
Deleting existing data

To remove all existing inspection reports and control charts, go to the **Start** worksheet and click the following button:

NOTE: Once this has been done, the data is no longer retrievable.

Appending new imported data to existing data

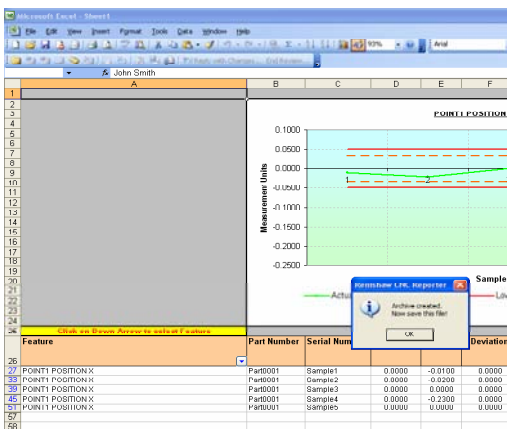
It is possible to combine multiple sets of results by importing multiple text files in the order in which they are received. You are warned that the file you are importing will be appended to the existing data:



Creating an archive of imported results data and control charts

If you wish to keep a copy of all the imported, formatted and controlled data, go to the **Start** worksheet and click the following button:

This creates a duplicate Excel® file but without the **Start** and **Admin** worksheets. Although many of the automation macros are removed, the control chart data filter is still active.



Indicating a new component inspection report

Within a batch of parts, it is important to indicate when a new component is being inspected. This is done by outputting a “trigger word” at the end of the final Productivity+™ inspection cycle.

This “trigger word” is entered on the **Admin** worksheet as shown in the example below:

New Part Inspection Sheet "Trigger Word"

COMPONENTEND

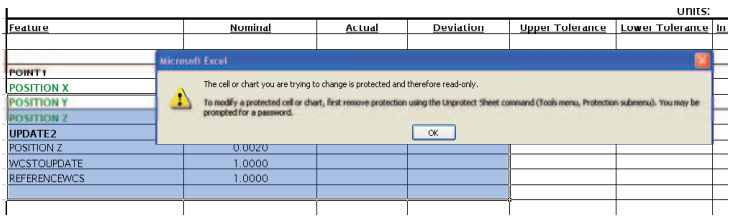
CAUTION: The “trigger word” entered here must match exactly the term used in the macro program (see page 3).

Data protection

When data is imported into Renishaw CNC Reporter™ and formatted, it is protected to ensure that data is not deleted or changed.

NOTE: This is important when the integrity of inspection data is audited as part of a company’s or customer’s quality process requirements.

As a result, if an attempt is made to delete or edit a field, a warning appears.

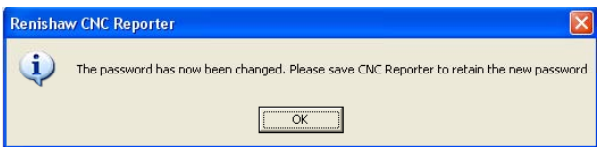


However, there may be instances when data needs to be altered due to errors within the quality system.

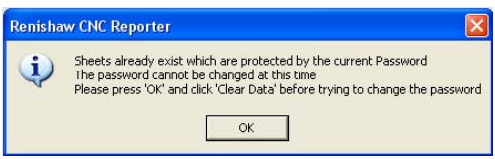
Before a field can be edited, the sheet must be unprotected. This is done using the Excel® command sequence Tools > Protection > Unprotect Sheet.

A password is required. The default password on installation is “password” (in lowercase), but this can be changed on the **Admin** worksheet by clicking the following button:

You are prompted to enter the old password and then the new password twice. Once this has been done, you are prompted to save.



NOTE: You may only change the password when there is no data within Renishaw CNC Reporter™.


Renishaw CNC Reporter
Sheets already exist which are protected by the current Password
The password cannot be changed at this time
Please press 'OK' and click 'Clear Data' before trying to change the password
OK

Maintenance

New versions of Renishaw CNC Reporter™ will be made available for downloading from www.renishaw.com. New versions will contain bug fixes and improvements to functionality. There is no charge for maintenance and no reactivation will be necessary after the new Renishaw CNC Reporter™ application has been installed on licensed PCs.

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For worldwide contact details, please visit our main web site at www.renishaw.com/contact

H-2000-6505-01